

WHAT IS CLAIMED IS:

1. A navigation system comprising:
 - a monitor screen operable to display images;
 - a map-image drawing unit operable to generate map image data for presentation of a map image in a window on the monitor screen;
 - a simple-map drawing unit operable to generate simple-map image data for presentation of a simple map image of a main road extending outside of the window; and
 - an image combining unit operable to display the map image inside the window and the simple image of the main road outside of the window on the monitor screen;
 - wherein the map image in the window is presented in greater detail than the simple map image located outside of the window.
2. The navigation system of claim 1, wherein a name corresponding to the main road is displayed on the simple map image.
3. The navigation system of claim 1, wherein the main road has a rank higher than or equal to the rank of collector roads.
4. The navigation system of claim 1, wherein the simple map image is a deformed map image that schematically shows a traveling road along which a vehicle drives, a nearest main road that first crosses the traveling road ahead of the vehicle outside the map area, and right and left main roads that extend outside the window and that cross the nearest main road at intersections on the right and left sides of an intersection of the traveling road and the nearest main road.
5. The navigation system of claim 4, wherein the simple-map image drawing unit schematically shows the nearest main road and the right and left main roads by straight lines.

6. The navigation system of claim 4, wherein the simple-map image drawing unit changes the shape of the deformed map image depending on the number of intersections and the number of road links on the nearest main road and the right and left main roads.

7. The navigation system of claim 4, wherein when an in-area main road crossing the traveling road ahead of or behind the vehicle is inside the window, the simple-map drawing unit schematically draws an outer portion of the in-area main road protruding from the map area so that the outer portion moves with the movement of an inner portion of the in-area main road lying in the window.

8. The navigation system of claim 4, wherein the simple-map drawing unit detects whether the nearest main road enters the window.

9. The navigation system of claim 8, wherein the simple-map drawing unit updates the deformed map image when the nearest main road enters the map area.

10. The navigation system of claim 4, wherein the nearest main road and the right and left main roads are drawn in the simple-map image only when the main roads have an intersection within a predetermined distance from the vehicle.

11. The navigation system of claim 10, wherein when none of the main roads have an intersection within the predetermined distance from the vehicle, the monitor screen is switched to display the map image on the designated scale on the entire monitor screen on the basis of the map image data generated by the map-image drawing unit.

12. A navigation system comprising:

a monitor screen operable to display a map image;
a window portion provided at a predetermined position on the monitor screen operable to display a map image generated in a designated scale;
an simple image potion of the monitor screen external to the window portion operable to display a simple map image of a main road extending outside a the window.

13. The navigation system of claim 12, wherein the simple map image is generated on the basis of a wide-area map.

14. A method for displaying map image information, said method comprising the acts of:
providing a vehicle;
providing a navigation system inside said vehicle, said navigation system including a monitor screen operable to display map images;
identifying intersections with a main road within a predetermined distance of the vehicle;
determining shape of road based on the intersections and on road links linking the intersections;
generating simplified map data for display outside of a predetermined portion of said monitor screen.

15. The method of claim 14 wherein the predetermined distance is three miles.

16. The method of claim 14 further comprising the act of detecting whether a nearest main road has entered the predetermined portion of the monitor screen.